COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

TOWN OF FRAMINGHAM REQUEST FOR DETERMINATION OF RATES APPLICABLE TO TRANSPORTATION AND TREATMENT OF SEWAGE PURSUANT TO INTERMUNICIPAL AGREEMENT	)	**D.T.E. 02-46**

TESTIMONY OF STEPHEN H. GERIBO, P.E.
ON BEHALF OF THE TOWN OF FRAMINGHAM

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Q: Please state your name for the record.

A: Stephen H. Geribo.

Q: What is your residential address?

A: 5 Tilden Commons Drive, Quincy, Massachusetts.

Q: Your date of birth?

A: September 23, 1947.

Q: Where are you currently employed?

A: SEA Consultants, Inc.

Q: What is your business address?

A: 485 Massachusetts Avenue, Cambridge, Massachusetts.

Q: What is your position at that company?

A: Senior Vice-President and Principal Engineer.

Q: How long have you held that position?

A: About fifteen years. Prior to that time, I was a Project Manager.

Q: For what period of time have you been employed at SEA?

A: Since July, 1971.

Q: On whose behalf are you offering testimony?

A: On behalf of the Town of Framingham.

Q: Are you being paid for offering testimony on behalf of Framingham?

A: Yes, my company is being paid for the work it is doing on behalf of Framingham in this and other matters.

Q: Thank you. Could you please describe your educational background.

A: I received a Bachelor of Science degree in Civil Engineering from Northeastern University in 1970. I received a Master of Science degree in Environmental Engineering from Northeastern University in 1977.

Q: Do you currently maintain any professional registrations?

A: Yes. I am a registered civil engineer with active registrations in Massachusetts, Connecticut, Maine, New Hampshire, and New Jersey.

Q: Do you currently have any professional affiliations?

A: Yes. I am a member of various professional engineering organizations, including the American Council of Engineering Companies of Massachusetts, the American Society of Civil Engineers, the Boston Society of Civil Engineers, the New England Water Environment Association, and the Water Environment Federation.

Q: Have you held leadership positions within these organizations, or actively participated in any subcommittee activities?

A: Yes. As a member of the Program Committee and the Environmental Committee of the American Council of Engineering Companies of Massachusetts, I reviewed draft regulations on the Clean Water Act and a proposed national Combined Sewer Overflow

("CSO") policy. I am a past chairman of the Environmental Technical Group of the Boston Society of Civil Engineers. I am also past chair of the Program Committee and a member of the Legislative Affairs Committee of the New England Water Environment Association.

Q: Have you authored any publications pertaining to issues of wastewater treatment, transportation, or disposal?

A: Yes. I have written extensively on wastewater issues. Most recently, I co-authored a study titled "Addressing Effluent Toxicity at the North Brookfield Wastewater Treatment Plant," New England Water Environment Association Journal (May, 1995). A complete list of publications is included in my resume.

Q: I'd like to mark a copy of Mr. Geribo's resume as FR-1. Mr. Geribo, can you tell me about your employment history, beginning with your graduation from Northeastern University in 1970 and continuing through the date you joined SEA.

A: While obtaining my undergraduate degree from Northeastern, I worked for Ernest W. Branch, Inc. in Quincy, Massachusetts, as a surveyor and junior engineer. I continued to work for this office for one year following graduation. I then was commissioned as a 2nd Lieutenant in the United States Army, and spent three months on active duty. I thereafter started with SEA.

Q: In the course of your employment at SEA, have you had occasion to consult with any municipalities regarding the design, renovation, upgrading, or maintenance of a municipal sewer system?

A: Yes, on numerous occasions. From February 2002 to present, I have acted as a consultant for the Town of Dudley, Massachusetts, in evaluating whether Dudley is being billed correctly under an Intermunicipal Agreement between Dudley and the Town of Webster, Massachusetts. From 1994 to present, I have acted as a consultant for the Town of Charlton, Massachusetts on several wastewater projects. These projects include the planning and design of a 450,000 GPD (gallons per day) advanced wastewater treatment facility and the construction of over 100,000 linear feet of sewer lines and several pumping stations. As part of that work, I assisted in the development and negotiation of agreements between the Massachusetts Turnpike Authority, regional school districts, private developers and the Town of Charlton.

From 1996 to present, I have served as a consultant to the Town of Tyngsborough, Massachusetts, with respect to the planning, design, and construction of a $4,000,000 expansion of the Town’s wastewater collection system. In addition, I consulted on the design of a wastewater flow metering station to measure the wastewater flows from Tyngsborough into the City of

Lowell. From 1984 to 1990, I served as technical manager and lead design engineer for a $30,000,000 regional wastewater treatment facility serving the Towns of Westborough, Shrewsbury, and Hopkinton. From 1971 to 1984, I managed the planning, design, and construction of numerous sewer extension projects within the Town of Westborough. From 1980 to 1987, I managed the planning, design, and construction of interceptor and collection sewers serving the Town of Abington. I also was consulted in connection with the development of an Intermunicipal Agreement between the Towns of Abington and Brockton. A complete list of the municipal sewer projects in which I am or have been involved is set forth in my resume.

Q: Framingham moves that the Department acknowledge that Mr. Geribo is qualified to offer expert testimony in this matter as to issues pertaining to the treatment, transportation and disposal of wastewater, the planning, design, renovation, replacement, and repair of wastewater collection and treatment systems, and the costs associated with the construction and operation of such systems.

Mr. Geribo, has the Town of Framingham retained you as a consultant on issues pertaining to the Town's wastewater collection system?

A: Yes.

Q: When did Framingham retain you in that capacity?

A: In May, 2000, although the final contract documents were not executed until July 2000.

Q: What consulting work has Framingham asked you to perform?

A: SEA has worked, and is working, on several projects related to Framingham's wastewater collection system. In July 2000, Framingham asked SEA to conduct an odor and corrosion control study. The purpose of the study was to investigate the causes and sources of odor and corrosion in the Framingham sewer collection system, to develop cost-effective interim measures for reducing levels of odor and corrosion in the system, and to make recommendations regarding long-term system improvements designed to reduce levels of odor and corrosion in the system. SEA released its final report on this study in March, 2002, titled "Final Report on Odor and Corrosion Control Study of the Framingham System."

In December 2000, Framingham asked SEA to conduct a sewer rate assessment study. One of the purposes of the study was to develop a methodology for Framingham to use in assessing sewer use costs to Ashland, and to those Natick and Southborough residents who connect directly to Framingham's sewer system. In May, 2001, SEA released its final report on this study, titled "Sewer Rate Assessment Study."

In December 2002, Framingham asked SEA to prepare a comprehensive wastewater management plan for the Town. The

purpose of this plan is to develop a multi-year capital improvement plan for the municipal sewer system that will address the following issues: (1) infiltration and inflow into the system; (2) the extent of sulfide corrosion within the system; (3) sewer capacity; (4) system configuration; and (5) the overall condition of the system. This work is ongoing.

Q: What work did SEA undertake in connection with the sewer rate assessment study?

A: We carried out a visual inspection of the sewer system and reviewed maps and plans of the system, with particular emphasis on those parts of the system that accept flows from neighboring communities. We also analyzed existing flow data reflecting the gallonage of sewage received from neighboring communities and from significant Framingham users. We reviewed financial data pertaining to operation of the system, including Framingham's operations and maintenance data, data reflecting Framingham's payments to the MWRA, and data reflecting payments made to Framingham by neighboring communities. Finally, we reviewed copies of existing intermunicipal agreements and relevant municipal permits. As a result of this work, SEA was able to develop a methodology for assessing to outside communities an appropriate fee for use of Framingham's sewer system.

Q: Are the results of your study set forth in the May, 2001 sewer rate assessment study you mentioned earlier?

A: Yes.

Q. Framingham moves to admit a copy of SEA's May, 2001 Sewer Rate Assessment Study, previously submitted to the Department on December 18, 2002, as Exhibit FR-2.

Mr. Geribo, does Framingham's sewer system convey wastewater generated by users of Ashland's sewer system?

A: Yes.

Q: Can you describe the connections between Ashland's sewer system and Framingham's system?

A: Yes. Wastewater from Ashland's sewer system is discharged to Framingham's system at two connection points, generally known as the Farm Pond Interceptor and the Bates Road Connection. As to the first connection point, the pipeline (also known as the "Chestnut Street connection") begins at the Chestnut Street pump station in Ashland. The pipeline then continues underground from Ashland into Framingham, generally following Waverley Street and passing through the CSX Railway yard. The pipeline discharges into the Farm Pond Interceptor, near the southeast corner of Farm Pond. Between one and two miles of the pipeline, which is owned by Ashland, lies in Framingham. The most recent maps reviewed by SEA show this pipeline to be 18-inches in diameter. After Ashland's sewage enters Framingham's system at the Farm Pond connection, Ashland's wastewater travels through a shared pipe along Waverley Street and Beaver Street, and then

joins other major sewer pipes at Beaver Street. The pipeline then runs to Arthur Street, where it joins up with the MWRA's Framingham Extension Sewer ("FES").

The pipeline that terminates at the Bates Road connection begins at the Brackett Road pumping station in Ashland, enters Framingham along Brackett Road, then turns right onto Bates Road. Approximately 1,000 feet of the pipeline, which is owned by Ashland, lies in Framingham. The most recent maps reviewed by SEA show this pipeline to be 8-inches in diameter. After Ashland's sewage is discharged at the Bates Road connection, the sewage flows through a Framingham-owned pipeline that roughly follows the Beaver Dam Brook to Beaver Street, where the pipeline joins with other pipelines, including the pipeline from the Farm Pond interceptor. The sewage then flows to the MWRA connection at Arthur Street.

Q: Did SEA prepare a map depicting the two points at which Ashland's sewage enters Framingham's system?

A: Yes. Attached as Appendix C to FR-2 is a schematic map depicting the major pipelines of the Framingham sewer system and the two points at which Ashland discharges wastewater to the system.

Q: Framingham moves to admit this map, previously submitted to the Department as a separate document on November 25, 2002, as Exhibit FR-3.

Mr. Geribo, in connection with the study marked as Exhibit FR-2, did SEA gather data pertaining to the quantity of wastewater that Ashland discharges into Framingham's sewer system?

A: Yes. We reviewed flow data generated by the Massachusetts Water Resources Authority ("MWRA") in January, 2001, which was the most recent data available to SEA at the time it prepared its May, 2001 report.

Q: Is that data reflected in SEA's report, Exhibit FR-2?

A: Yes. Attached as Appendix A to Exhibit FR-2 is a table prepared by the MWRA for the community of Framingham, titled "Wastewater Metering Cost Benefit Analysis." The flow numbers reflecting Ashland's discharges into Framingham's sewer system are identified in the column headed "AS-FR-1C," which reflects the discharge into the Farm Pond Interceptor, and the column headed "AS-FR-2C," which reflects the discharge into the Bates Road connection.

Q: Based upon these flow numbers, did SEA make any determination as to the quantity of wastewater that Ashland was discharging into Framingham's system as of January, 2001?

A: Yes. Based on the MWRA's flow data, SEA estimated that as of January, 2001, Ashland was discharging approximately 0.766 MGD (million gallons per day), or approximately 766,000 gallons per day, into Framingham's system.

Q: Does that data indicate that Ashland consistently is discharging 0.766 MGD into Framingham's system?

A: No. That figure represents an average daily flow, based on flow data accumulated by the MWRA on an annual basis.

Q: Now you testified earlier that the 0.766 MGD figure was an approximation, is that correct?

A: Yes. The flow data provided by the MWRA is based on meter readings taken at locations in Ashland, rather than meters located at the two discharge points in Framingham. Thus, the data does not reflect any flows that enter the pipes between the metering locations and the discharge points.

With respect to the Farm Pond connection, the MWRA meter is located approximately 2.5 miles before the actual discharge point. Because there likely will be infiltration and inflow into this pipe between the metering point and the point of discharge, the MWRA's flow numbers likely underreport the actual flow into Framingham's system.

Q: What is "infiltration" and "inflow"?

A: Infiltration is water other than wastewater that enters a sewer system from the ground through means of defective pipes, pipe joints, connections, and manholes. Inflow is water other than wastewater and infiltration that enters the sewer system from various sources, including roof leaders, sump pumps,

drains, manhole covers, and cross connections to the storm drain system.

Q: Are there any factors associated with the pipeline running from Ashland's Chestnut Street pumping station to the Farm Pond Interceptor that would make it more likely that infiltration and inflow are entering the pipe before the discharge point?

A: Yes. Before the pipeline discharges to Framingham's system, it runs below ground adjacent to a large water body, Farm Pond, making it vulnerable to groundwater infiltration.

Q: Are the MWRA's figures pertaining to average daily flow at the Bates Road connection also approximate figures?

A: Yes. In addition to the inflow/infiltration issue, there is an additional connection to the Ashland line after the metering point, and before the discharge point, at Douglas Road. The MWRA has attempted to correct for this missed connection by estimating the flow as .01 MGD. While this estimate may be close to accurate, it remains an estimate.

Q: Is there a way to obtain more accurate flow data?

A: Yes. At the time SEA's study was prepared, we observed that there were inoperative "Parshall flume" metering devices at both discharge points. If these devices were operative, or other metering devices were installed at the two discharge points, we would have more accurate data as to the quantity of wastewater entering Framingham's system from Ashland.

Q: What is a Parshall Flume device?

A: A Parshall Flume is a hydraulic device that is shaped somewhat like an hourglass with open ends. It is inserted along a pipeline. As sewage passes through the most narrow part of the pipe or restriction, the flow velocity and depth of flow increase. An electrical measuring device can be put into place to record the level of the wastewater or depth of flow then passing through the pipe. The instrument then computes the depth of wastewater to a flow value, which can be totaled and charted. Without this electrical measuring device, however, the flume is nothing more than a restriction in the pipeline, and performs no measurement function.

Q: In connection with preparing Exhibit FR-2, did you make any investigation as to whether either municipality had agreed to install metering devices at the two discharge points?

A: Yes. We reviewed the December, 1963 Intermunicipal Agreement between the two municipalities, which provided that Ashland was to install Parshall Flume metering devices at the two discharge points.

Q: Based on your observations of the sewer system, has Ashland fulfilled its obligation to install functioning metering devices at the two discharge points?

A: No. The two Parshall Flumes we observed were not functional.

Q: What do you say to Ashland's claim that it was unable to install electrical measuring devices in the Parshall Flumes because there was no available source of electrical power?

A: Ashland could have installed a source of power for these electrical measuring devices, or could have installed some other sort of battery-powered metering device that would serve the same purpose as the Parshall Flume.

Q: Using the flow data provided by the MWRA, did you make any determination as to what percentage of Framingham's total wastewater flow as of January, 2001 consisted of Ashland's wastewater?

A: Yes. The MWRA's flow data indicated that Framingham's total wastewater flow as of January, 2001, as measured by a meter located near the point at which Framingham's system discharges to the FES, was 8.993 MGD. Of that total discharge, 8.039 MGD represented flows from Framingham customers, 0.766 MGD represented Ashland wastewater, and 0.188 MGD represented Natick wastewater. Thus, we calculated that Ashland's flows represented 8.7 % of the total flow to the FES.

Q: Do you have understanding as to whether Framingham was receiving any compensation from Ashland for Ashland's use of its sewer system?

A: Yes. It has been represented to us that Ashland, over the past thirty to forty years, has paid Framingham approximately

$5,500 per year for the privilege of utilizing Framingham's sewer system.

Q: In your opinion, Mr. Geribo, based on your training, experience, and education, did this annual payment represent a fair and proportionate share of Framingham's costs of operating its wastewater collection system?

A: No.

Q: Why not?

A: As of January, 2001, Ashland's flow represented 8.7 % of the total flow to the FES. In my professional opinion, because Ashland utilizes Framingham's system to reach the FES, Ashland should pay a similar percentage share of Framingham's costs of operating and maintaining the sewer system. As set forth in Exhibit FR-2, Framingham's costs of operating and maintaining its sewer system, as of January, 2001, were approximately $2,317,000 per year. Thus, we concluded in our report that Ashland should have paid Framingham $203,000, or approximately 8.7% of the total O&M expenses for that period.

Q: Based upon your analysis, did you make any recommendations to Framingham as to the fees Ashland should be paying for Framingham's transportation of Ashland's sewage?

A: Yes. We recommended that Framingham bill Ashland, in each year, by multiplying Ashland's flow percentage by Framingham's

total O&M expenditure in that year. This formula is set forth at page 6-21 of Exhibit FR-2.

Q: Mr. Geribo, were the figures you utilized in determining Ashland's fair and proportionate share of Framingham's O&M expenses for the 2001 fiscal year final numbers for that time period?

A: No. At the time we prepared our May, 2001 report, those numbers were estimated.

Q: Did you ever obtain final numbers for the 2001 fiscal year?

A: Yes. Final numbers for the 2001 fiscal year, and preceding fiscal years, are reflected in the table attached at Tab G to Framingham's Response to the Department's First Set of Information Requests.

Q: Framingham moves to have the table attached at Tab G to Framingham's Response to the Department's First Set of Information Requests admitted as Exhibit FR-4.

Mr. Geribo, using the data provided in Exhibit FR-4, did you calculate the amount that Ashland should have paid to Framingham for Ashland's use of Framingham's sewer system in the 2001 fiscal year?

A: $257,163.

Q: How did you reach that number?

A: I first calculated Ashland's flow percentage for 2001 by dividing Ashland's flow, 1.05 MGD, by the total flow, 8.03 MGD,

which results in a flow percentage of 13.08%. I then multiplied this number by the final Framingham O&M figure for 2001 of $1,966,684, which resulted in the figure of $257,163.

Q: Did you perform similar calculations as to payments that Ashland should have made to Framingham in the 1997, 1998, 1999, and 2000 fiscal years?

A: Yes. Ashland should have paid $310,320 in 2000, $152,962 in 1999, $178,141 in 1998, and $154,696 in 1997.

Q: Did you base each of those calculations on the final flow rates provided to you by the MWRA, and the final budget numbers provided to you by Framingham?

A: Yes.

Q: Mr. Geribo, in your professional opinion, based on your knowledge, training, and experience, do each of the figures reflected in the last column of Exhibit FR-4 represent Ashland's fair share of operations and maintenance expenses incurred by Framingham in each of those years?

A: Yes.

Q: Do you have any understanding as to the amount Ashland actually paid to Framingham, in each year since 1997, as its share of operations and maintenance expenses incurred in each year?

A: Yes. It is my understanding that since 1997, and for many years prior to 1997, Ashland has paid Framingham $5,500 per year as its share of operations and maintenance expenses.

Q: In your professional opinion, Mr. Geribo, based on your knowledge, training, and experience, did that $5,500 payment by Ashland represent its fair share of the costs of operating and maintaining Framingham's system?

A: No. Framingham's annual cost of operating and maintaining its wastewater collection system, over the past five years, has averaged $ 2,011,544 for 1997 to 2001. Ashland's annual payment of $5,500 is only 0.27 % of that average annual amount. Over the same time period, however, Ashland has discharged into Framingham's system an average of 0.882 MGD, or an average flow percentage of 10.2%. Thus, in my opinion, Ashland's past payments clearly have been grossly disproportionate to the burden Ashland's discharges have placed on Framingham's system.

Q: Mr. Geribo, where did SEA obtain the O&M figures utilized in your report?

A: From the Town of Framingham.

Q: In preparing your report, did you attempt to separate out from Framingham's total O&M expenses those expenses directly attributable to operation and maintenance of the parts of the system utilized by Ashland?

A: No. As an initial matter, I know of no community that segregates its operation and maintenance expenses in that fashion. Further, because Framingham does not segregate its operations and maintenance expenses in that fashion, it would be impossible to determine what percentage of labor costs, for example, were attributable to repairs performed on the two large pipelines utilized by Ashland. Moreover, in my professional opinion, Ashland, like any other Framingham customer, should pay its fair share of operating and maintaining the entire system, not just a part of the system.

Q: What about the costs of operating the pumping stations?

A: In our draft report, we had separated the “utilities” charges into two categories – “pumping station related” and “other.” We also had deducted the pumping station O&M charges from the total O&M charges to be assessed to Ashland, because Ashland’s sewage does not flow through any of Framingham’s pumping stations. On further reflection, however, we realized that this deduction was not justified.

Q: Why did you come to that conclusion?

A: For several reasons. First, the IMA references the “whole” system. The pumping stations are an integral part of the entire Framingham sewer system. Second, if the pumping stations were not in their current locations, the collection system would likely be configured very differently. If the system were

placed deeper in the ground to reduce the number of total pumping stations, then Ashland's wastewater would need a pump station to enter the FES. Alternatively, if the Town had not extended the collection system using pumping stations, the existing pipes would be smaller and therefore unlikely to have the capacity necessary to convey Ashland's wastewater. In short, because Ashland benefits from all of the expenditures made by Framingham in operating and maintaining its entire station, including the pumping stations, Ashland should pay its fair share of the costs incurred in connection with the entire system.

Q: Mr. Geribo, have you had the opportunity to review the report prepared by Vollmer Associates, Inc. on behalf of the Town of Ashland?

A: Yes.

Q: What is your understanding as to Vollmer's proposed methodology for calculating the payment that should be assessed to Ashland by Framingham?

A: Vollmer first calculated that Ashland uses 3.04% of Framingham's pipelines. This percentage figure is derived by comparing the inch-miles of pipe utilized by Ashland to the inch-miles of pipe in the entire system.

Q: What is an inch-mile?

A: An inch-mile is a unit of measurement that is derived by multiplying the length of a pipe by its diameter, then dividing that number by 5,280.

Vollmer then multiplied this figure (3.04%) by a ratio consisting of (Ashland's interbasin transfer allocation (3.2 MGD) divided by Framingham's interbasin transfer allocation (28.35 MGD)), and then further multiplying that number by Framingham's annual operations and maintenance costs.

Q: What is your understanding as to the source of these interbasin transfer allocation numbers?

A: An interbasin transfer allocation is the quantity of groundwater that one community is permitted to "transfer" from its designated water basin to another basin. To the best of my knowledge, the figures used in the Vollmer report were developed by the MWRA approximately ten years ago, in connection with a study presented to the State Water Resources Board on the need to build the Framingham Extension Relief Sewer ("FERS"), a large MWRA pipeline that transports overflow from the FES.

Q: In your professional opinion, Mr. Geribo, based on your knowledge, experience and training, is the formula advocated by Vollmer Associates an appropriate methodology to be used in determining the fee that Ashland should pay to utilize Framingham's sewer system?

A: No, it is not.

Q: Why not?

A: As an initial matter, the utilization of interbasin transfer allocation figures is improper because those figures are based on hypothetical flows, rather than actual flows. Thus, Vollmer's formula does not attempt to determine actual sharing percentages with respect to the pipes Ashland utilizes, but possible sharing percentages if both communities were to utilize their maximum IBT allowances. The use of peak allowable flows, rather than actual flows, is a technique more properly used when apportioning capital costs for shared pipelines, rather than operations and maintenance charges. Furthermore, the current IMA between Framingham and Ashland does not even permit Ashland to discharge 3.2 MGD into Framingham's system, so the use of this figure bears no relation to reality.

An even more fundamental flaw in Vollmer's proposed methodology, however, is that it recommends the apportionment of operations and maintenance charges on an inch-mile basis. Ashland, like any other customer of Framingham's sewer system, discharges a certain amount of wastewater into Framingham's system. All other Framingham customers are charged on a flow basis – you pay for your use of the system, not just that particular part of the system that your wastewater flows through. For example, if one looks at the map marked as Exhibit FR-3, Framingham has sewer customers whose wastewater travels

through even less pipe, in inch-miles, than Ashland's. In fact, some of Framingham's sewer customers are located less than 100 feet from the FES. Yet each of these customers is charged on a flow basis, not on a formula that attempts to determine what portions of the sewer system the customer actually uses.

Q: Now, those customers you just mentioned, whose homes are very close to the FES, does their wastewater flow through any of Framingham's pumping stations?

A: No.

Q: Do the sewer charges assessed to those customers include operations and maintenance charges associated with upkeep of Framingham's pumping stations, and with upkeep of pipelines that are not used by those customers?

A: Of course.

Q: Mr. Geribo, are you aware of any municipality that assesses its sewer customers on the basis of the inch-miles of sewer pipe actually utilized by each particular customer?

A: No.

Q: Does Ashland charge its own customers on the basis of the inch-miles of sewer pipe actually utilized by each customer?

A: No. According to Ashland's discovery responses in this case, Ashland charges its sewer customers on a flow basis.

Q: Mr. Geribo, how many different municipalities have retained you to provide consulting services related to their wastewater collection systems.

A: Approximately 30.

Q: Of those municipalities, has each one charged its sewer customers based on a flow basis?

A: Yes.

Q: Mr. Geribo, do you have any knowledge as to how the MWRA calculates the costs it assesses to each member community?

A: Yes. The MWRA's assessments to member communities have two components – an operations and maintenance charge, and a capital-based charge. The primary factor utilized by the MWRA in calculating its O&M assessments to member communities, including Framingham and Ashland, is the amount of flow discharged to the MWRA's system. The MWRA also considers the amounts of total suspended solids ("TSS") and biochemical oxygen demand ("BOD") discharged to the system.

In contrast, the MWRA assesses capital-based charges to its member communities primarily on two bases – the total town population, and the percentage of the town population that is sewered. The methodology is designed to take into account the possible future needs of the community for public sewer services.

Q: Does the MWRA's formula for calculating either O&M-based charges or capital-based charges take into account the distance a municipality's wastewater must travel through the MWRA system before the terminus of the system?

A: No. If the MWRA assessed charges on that basis, East Boston residents would pay far less than the residents of Ashland. Fortunately for the residents of Ashland, that is not the case.

Q: Mr. Geribo, in your role as a consultant to municipalities on wastewater issues, have you worked with communities, other than Framingham, that have had arrangements to transport the sewage of neighboring communities?

A: Yes. I have worked with several municipalities, including Abington and Bellingham, that have had such arrangements.

Q: In connection with your work, were you supplied with copies of agreements relating to these intermunicipal arrangements for the transportation of sewage?

A: Yes.

Q: Did you previously provide true and accurate copies of those agreements to me?

A: Yes.

Q: Framingham moves to have copies of certain intermunicipal agreements admitted as Exhibits FR-5, FR-6, FR-7, FR-8, and FR-9.

Mr. Geribo, can you identify the municipalities involved in each of these intermunicipal agreements?

A: Yes. FR-5 is an intermunicipal agreement between the City of Brockton and the Town of Abington, dated November 28, 1973, permitting Abington to discharge wastewater from its western section to Brockton's central sewer system. This agreement was amended in May, 1978, in October, 1986, and again in October, 1998.

Exhibit FR-6 is an intermunicipal agreement between the Town of Bellingham and The Charles River Pollution Control District, dated March 19, 1984, permitting Bellingham to discharge its wastewater into a sewer system operated by the CRPCD. This agreement was amended in November 15, 1988.

Exhibit FR-7 is an intermunicipal agreement between the Town of Abington and the Town of Rockland, dated February 24, 1983, permitting Abington to discharge wastewater from a certain section of the town to Rockland's central sewer system.

Exhibit FR-8 is an intermunicipal agreement between the City of Woonsocket, Rhode Island and the Town of Bellingham, Massachusetts, dated June 29, 1988, permitting Bellingham to discharge its wastewater to Woonsocket's central sewer system.

Exhibit FR-9 is an intermunicipal agreement between the City of East Providence, Rhode Island and the Town of Barrington, Rhode Island, dated May 21, 1973, permitting

Barrington to discharge its wastewater to East Providence's sewer system.

Q: Do each of these intermunicipal agreements contain provisions pertaining to the methodology by which the municipality receiving the sewage will charge the other municipality?

A: Yes.

Q: Is the methodology utilized in each of these agreements similar to the methodology proposed in your report, and by that I mean a flow-based calculation?

A: Yes.

Q: Mr. Geribo, do you have an understanding as to what it means to charge a customer on a wholesale basis?

A: Yes. I understand that a wholesale customer is a customer that buys a product in bulk, typically for distribution to end users. The wholesale customer is able to buy the product at a discounted price because it is purchasing the product in large quantities.

Q: Do you consider Ashland to be a wholesale customer of Framingham's?

A: No. Ashland is not buying a product from Framingham, nor is it redistributing a product to end users. Ashland, like all other Framingham sewer customers, is paying Framingham for a service – the transportation of its wastewater.

Q: In all of the years you have acted as a consultant on wastewater issues, have you ever known a municipality to charge a sewer customer on a wholesale basis?

A: No.

Q: If the Department were to determine that Ashland was a wholesale customer, would that in your mind justify application of the inch-miles formula advocated by Vollmer Associates?

A: No. A wholesale customer is charged on a volume basis – i.e., based on the amount of product delivered – which in this instance would translate to a flow-based formula. I know of no wholesale formula that is not based on quantity or volume delivered.

Q: Now, Mr. Geribo, in your report marked as Exhibit FR-2, did you make any attempt to calculate what it would cost Ashland to build its own connection to the FES?

A: No. We did not make such a calculation in that study. At the request of counsel, we have, during the course of this litigation, made such a calculation.

Q: What have you determined would be the cost to Ashland of building a direct connection to the FES?

A: We estimated that the cost would be approximately $10,000,000. This estimate includes design, permitting, construction, and administrative costs. This estimate does not

include bonding, interest, environmental mitigation, and other mitigation that may be required as a result of construction.

Q: Did SEA prepare a table detailing these estimated costs?

A: Yes.

Q: Framingham moves to have this table admitted as Exhibit FR-10. Mr. Geribo, please direct your attention to Table 6.2, which appears at page 6-22 of the report marked as FR-2. What do the figures in that table represent?

A: In that table, SEA was attempting to approximate the amount Ashland would have to pay Framingham <u>today</u> to purchase the right to discharge sewage into Framingham's system at its current rate of discharge. We calculated that, if Ashland were seeking to establish that relationship today, Ashland would have to make an up-front payment to Framingham of $1,237,500 for that privilege. We made this calculation only for the purpose of providing Framingham with a basis on which to calculate any future buy-in charges to be assessed to Ashland under any future IMA.

Q: How did you reach that figure?

A: We based that figure on the approximate current value of each pipe now utilized by Ashland, multiplied by Ashland's approximate percentage use of each such pipe. We did not have records documenting actual capital costs incurred by Framingham over the past forty to fifty years.

Q: Now, Table 6.2 as contained in your original report had a typographical error regarding Ashland's percentage use of the pipe segment running from Beaver Dam Interceptor to Herbert Street, isn't that correct?

A: Yes.

Q: And you've previously supplied a corrected chart to the Department, as part of Framingham's response to DTE F-1-13?

A: That's correct.

Q: Framingham moves to have a copy of SEA's revised chart, which previously was submitted to the Department as part of Framingham's response to DTE F-1-13, admitted as Exhibit FR-11.

Mr. Geribo, did SEA also recommend that Framingham assess Ashland for some portion of any future capital repair and replacement costs related to the wastewater system?

A: Yes. At page 6-22 of SEA's report, we recommended that Framingham assess Ashland for any future capital upgrades to those pipelines utilized by Ashland according to the following formula:

Ashland Cost = Ashland Peak Flow/Framingham Peak Flow X Actual Construction Costs.

Q: Why does this formula use a "peak flow" ratio, as opposed to the actual flow ratio utilized in your O&M calculations?

A: We decided to use a ratio of peak flows, rather than actual flows, because all capital improvements should be designed to

ensure capacity for the peak projected flows permitted in the affected pipelines.

Q: Why did SEA base its recommendations regarding capital-based charges only on those parts of the system utilized by Ashland, while assessing Ashland's proportionate share of O&M costs based on a comparison of Ashland's flow to the flow throughout the entire system?

A: For a number of reasons. First, in my experience, other municipalities and the MWRA draw the same distinction. I have reviewed numerous intermunicipal agreements that use a flow-based analysis to calculate O&M charges, and a "shared use" analysis to calculate capital charges. Examples of these type of intermunicipal agreements have been marked as Exhibits FR-6, FR-7 and FR-9. Second, changes in flow will have a more direct and immediate impact on O&M charges than on capital costs. For example, if Ashland were to discharge a greater amount of wastewater into Framingham's system in any one year, there likely would be a more immediate impact on operations and maintenance charges (e.g., increased maintenance required on the siphons through which Ashland's sewage flows, increased expenses related to more frequent overflow and backup situations) than on capital costs. Third, while it is fair to treat Ashland as a "user" of the entire Framingham system for operations and maintenance purposes, as those expenses are incurred on an

annual basis, it is less fair to treat Ashland as a “user” of the entire system for capital improvement purposes, where Framingham expects and hopes that Ashland will be only a short-term user of the system. Thus, Ashland (unlike Framingham’s other customers) may obtain no long-term benefit from the renovation or replacement of a pipeline that is not utilized by Ashland.

Q: Mr. Geribo, as part of your Sewer Rate Assessment Study, did you conduct any investigation as to whether Ashland’s sewage contained high levels of sulfides?

A: No, not as part of that study. However, SEA has conducted a preliminary study of odor and corrosion within the Framingham system. As part of that study, we took samples of Ashland’s wastewater at the two discharge points into Framingham’s system. These samples showed that Ashland’s discharges, during the months August, 2001 to October, 2001, routinely exceeded the dissolved sulfide levels established by the MWRA, often by a significant margin.

Q: Was that study submitted to the Department as part of Framingham’s response to DTE F-1-14?

A: Yes.

Q: Framingham moves to have a copy of SEA’s study, titled “Final Report on Odor and Corrosion Control Study of the Framingham Sewer System,” previously submitted to the Department

as part of Framingham's response to DTE F-1-14, admitted as Exhibit FR-12.

Mr. Geribo, can you direct us to those portions of the report that describe your findings with respect to Ashland's discharges?

A: Of course. Appendix 3 to the report details our findings at particular sample locations. Sample Location H-1 reflects sample data taken at the point at which Ashland sewage discharges to the Bates Road connection. Dissolved sulfide levels at this location ranged from 1.6 mg/l to 3.1 mg/l, or five to ten times the permissible limit of 0.3 mg/l. Sample Location A-7 reflects sample data taken at the point at which Ashland sewage discharges to the Farm Pond connection. Significantly, these samples were taken during a time period in which Ashland purportedly was treating the sewage flowing to this discharge point with chemicals in an attempt to reduce sulfide levels. Even with the application of these chemicals, however, two of the five samples exceeded permissible limits, one by a factor of five.

Moreover, Figure 2-2 of the report, an oversized page that immediately follows page 18, is a schematic designed to show areas where wastewater sampling within Framingham exceeded permissible levels. The schematic shows that the samples taken

from all of the pipes utilized by Ashland exceeded permissible levels.

Q: Have you ever determined whether any particular Ashland users are responsible for the high sulfide levels in Ashland's wastewater?

A: Yes. MWRA data strongly suggests that Nyacol, a corporation located in Ashland that is in the chemical manufacturing business~~s~~, contributes 80% of all sulfates entering the MWRA system from Framingham.

Q: Where is that data found?

A: In an October 24, 2002 study published by the MWRA, titled FES Odor and Corrosion Control Study. A copy of that study was attached at Tab G to Framingham's response to DTE F-1-14. In Appendix G to that study, the MWRA prepared a graph comparing sulfate loading levels before, during, and after a total shutdown of the Nyacol facility. As this chart demonstrates, sulfate levels, as measured at the Arthur Street pump station in Framingham, decreased by 80% during the Nyacol shutdown.

Q: Framingham moves to have a copy of the MWRA graph admitted as Exhibit FR-13.

Mr. Geribo, how do sulfate levels relate to dissolved sulfide levels?

A: Sulfate represents the largest source of sulfur in wastewater. As wastewater decomposes in anaerobic conditions,

sulfate is converted to sulfide. The MWRA study that I mentioned above concluded that elevated sulfate wastewater concentrations substantially increase sulfide generation.

Q: Has the SEA made any determination as to whether, and to what extent, sulfide levels in Ashland's discharges have caused damage to Framingham's system?

A: As part of the comprehensive wastewater management plan I mentioned earlier, SEA is conducting a survey to identify the impact of excessive levels of sulfide on Framingham's system, and to identify ways of addressing this problem. SEA already has identified some corrosion that it believes is directly attributable to Ashland's discharges, including a manhole in the CSX railyard that was approximately 50 feet from the discharge point into the Farm Pond Interceptor, and a brick sewer structure known as the Willis Street Arch that is approximately 500 feet away from the Arthur Street pump station. The manhole is no longer in use, and the pipeline running through the Willis Street Arch has been rehabilitated.

Q: Has the MWRA taken any action against Framingham as a result of the sulfide levels exceeding permissible levels?

A: Yes. The MWRA has imposed a municipal limit on Framingham's sulfide discharges of 0.3 mg/l, where before there was no limit whatsoever, and has imposed other, more stringent limits on industrial users in Framingham and Ashland. The MWRA

also issued notices of violation to Framingham. Negotiations thereafter resulted in a settlement agreement between Framingham and the MWRA which, among other things, set a schedule for Framingham to take actions to reduce its discharges of sulfides.

Q: Mr. Geribo, could you please summarize the testimony you have given?

A: Yes. It is my professional opinion, based on my knowledge, training, and experience in the areas of wastewater treatment, transportation, and disposal, and the costs associated with the construction and operation of wastewater collection and treatment systems, that Ashland's proportionate share of Framingham's annual operations and maintenance expenses should be calculated based on the ratio of Ashland's flow to overall system flow, multiplied by Framingham's annual O&M expenses. It also is my opinion that the methodology proposed by Ashland would not fairly compensate Framingham for the costs associated with its transportation of Ashland's sewage, and would run counter to the methodology used by the MWRA and by other municipalities in similar situations.

Q: Does this conclude your testimony?

A: Yes.

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